

### Remarks

Applicants have carefully reviewed the application in light of the February 10, 2005 Office Action. To further prosecution, Applicants have added claims 27-34 to explicitly capture certain inventive aspects. Applicants respectfully submit that the application is in condition for allowance and request favorable action.

### Allowable Claims

The Examiner indicates that claim 26 is allowable. Detailed Action ¶ 5. Applicants thank the Examiner for this finding.

### Claim Objections

The Examiner objects to claims 19 and 25 as being dependent on a rejected base claim. Detailed Action ¶ 7. However, the Examiner indicates that the claims would be allowable if rewritten in independent form with all of the limitations of the base claims and any intervening claims. Id. Applicants thank the Examiner for this finding.

### Section 103 Rejections

The Examiner rejects claims 1-3, 5-18, and 20-24 under 35 U.S.C. § 103(a) because, according to the Examiner, these claims are unpatentable over U.S. Patent No. 4,221,134 issued to Ekstrom (“the ‘134 patent”) and U.S. Patent No. 5,187,985 issued to Nelson (“the ‘985 patent”). Detailed Action ¶¶ 2-3. Additionally, the Examiner rejects claim 4 under 35 U.S.C. § 103(a) because, according to the Examiner, the claim is unpatentable over the ‘134 patent, the ‘985 patent, and U.S. Patent No. 5,286,931 issued to Murphy et al. (“the ‘931 patent”). Detailed Action ¶ 4. Applicants disagree.

To render a claim prima facie unpatentable under § 103 based on a combination of references, an Examiner must establish that the references or the knowledge generally available to one skilled in the art teach or suggest combining the references, that there is a reasonable expectation of success in making the combination, and that the combined references teach or

suggest all of the claim's limitations. M.P.E.P. § 2143. Furthermore, the combination cannot alter the principle of operation of a reference. *Id.*

With respect to claims 1 and 12, two of the independent claims, the Examiner indicates that the '134 patent teaches a pressure measuring system 5 (pressure sensing unit) having a coupling device 12 (bolts), a pressure-conveyance media (fluid) responsive to external pressure on bolts 12, a pressure sensor operable to sense a pressure of the pressure-conveyance media, and a temperature sensor operable to sense a temperature of the pressure-conveyance media. Detailed Action ¶ 2. However, the Examiner finds that the '134 patent does not teach a processor operable to determine external pressure on the coupling device based on the pressure-conveyance media and the temperature of the pressure-conveyance media. To overcome this deficiency, the Examiner asserts that the '985 patent teaches a processor (compensation circuit) operable to determine external pressure and that it would have obvious to combine the processor of the '985 patent with the pressure measuring system of the '134 patent for the purpose of increasing accuracy and sensitivity at very low magnitudes of pressure. *Id.*

The Examiner's assertions, however, are erroneous. For example, the '134 patent does not teach or suggest that a fluid is responsive to external pressure on bolts 12. In fact, the '134 patent teaches or suggests nothing about pressure on bolts 12 or a fluid responsive to pressure on bolts 12. Moreover, upon examining FIG. 3 of the '134 patent, it is not apparent how external pressure on bolts 12 would affect a fluid, if any, in pressure sensing unit 5. As another example, the '134 patent does not teach or suggest a pressure sensor operable to sense a pressure of a fluid. On the contrary, the '134 patent teaches that a strain gauge assembly 20, which exhibits a piezo-resistive effect that produces an ohmic response to strain, senses the deflection of diaphragm assembly 13. col. 3, l. 41 – col. 4, l. 21; FIG. 3. Thus, strain gauge assembly 20 does not sense a pressure of a fluid, if one even exists, in pressure sensing unit 5. As a further example, the '985 patent teaches the use of temperature-sensitive resistors in a compensation circuit, the resistors being produced in the same process as the piezo-resistors that detect a pressure on a diaphragm. Abstract. In this manner, temperature inaccuracies of the piezo-resistors may be compensated. col. 12, ll. 35-66. But this does not teach or suggest that the compensation circuit is operable to

determine pressure, much less external pressure, based on pressure and temperature of a fluid. Furthermore, the systems in the patents are incompatible, because while the '134 patent generates a signal indicative of temperature, col. 9, ll. 50-60, the '985 patent can do nothing with it. Thus, the principle of operation of one of the patents would have to change to make the combination, but this is not permissible for a § 103 rejection. For at least these reasons, Applicants submit that the '134 patent and the '985 patent fail to support the Examiner's assertions with regards to claims 1 and 12.

With respect to claims 10, 11, and 20 – the other rejected independent claims, the Examiner asserts that the '134 patent teaches a coupling device including a diaphragm mechanically responsive to external pressure, a pressure-conveyance media disposed at least in part in the coupling device and responsive to the diaphragm, a pressure sensor positioned to sense a pressure of the pressure-conveyance media, and a temperature sensor positioned to sense temperature of the pressure conveyance media. Detailed Action ¶ 3. However, the Examiner asserts that the '134 patent does not teach a processor operable to determine external pressure on the diaphragm based on the pressure and temperature of the pressure-conveyance media. To overcome this deficiency, the Examiner asserts that the '985 patent teaches a pressure transducer having a processor (compensation circuit) operable to determine external pressure and that it would have been obvious to provide the processor of the '985 patent in the pressure measuring system of the '134 patent for the purpose of increasing accuracy and sensitivity at very low magnitudes of pressures. *Id.* The Examiner's assertions, however, are erroneous at least for the reasons expressed with respect to claims 1 and 12.

Claims 2-9 depend from claim 1, which has already been shown to have an insufficient rejection lodged against it. Because claims 2-9 depend from a claim that has an insufficient rejection lodged against it and the Examiner does not address claims 2-9 outside of their explicitly recited limitations, Detailed Action ¶ 2, these claims have an insufficient rejection lodged against them. Claims 2-9 also contain additional limitations to those recited in claim 1. These additional limitations provide differentiation over the cited patents.

For example, claim 3 specifies that “the seal comprises a diaphragm that is operable to mechanically respond to pressure exerted by a process media and to convey the response to the pressure-conveyance media.” As explained before, however, the ‘134 patent does not have a fluid responsive to external pressure on bolts 12 in pressure sensing unit 5. Furthermore, the ‘985 patent teaches or suggests nothing regarding a seal, a diaphragm, a process media, or a pressure-conveyance media. For at least these reasons, the ‘134 patent and the ‘985 fail to teach or suggest all of the explicit limitations of claim 3.

As another example, claim 9 specifies that “determining external pressure on the coupling device based on the pressure of the pressure-conveyance media and the temperature of the pressure-conveyance media comprises compensating the pressure of the pressure-conveyance media based on the temperature of the pressure-conveyance media and determining external pressure on the coupling device based on the compensated pressure of the pressure-conveyance media.” As the Examiner implicitly recognizes, however, the ‘134 patent fails to teach or suggest such operations. Also, as explained previously, the ‘985 patent teaches compensating for temperature-dependent electronics inaccuracies in a pressure measurement device by using temperature-sensitive resistors in a compensation circuit for a piezoresistor bridge coupled to a diaphragm. Abstract; col. 12, ll. 35-66. Thus, the ‘985 patent fails to teach or suggest determining pressure on a coupling device, much less “compensating the pressure of the pressure-conveyance media based on the temperature of the pressure-conveyance media” or “determining external pressure on the coupling device based on the compensated pressure of the pressure-conveyance media.” Applicants note the Examiner’s assertion to the contrary, Detailed Action ¶ 2, but the portions of the ‘985 patent to which the Examiner refers only discuss the composition of the compensation circuit, col. 3, ll. 5-22, and the general concept of temperature compensation for piezoresistive components of a transducer without using thermistors, col. 2, ll. 45-52. Thus, the ‘134 patent and the ‘985 fail to teach or suggest all of the explicit limitations of claim 9.

For at least these reasons, and for the reasons given with respect to claim 1, Applicants submit that the '134 patent and the '985 patent fail to teach or suggest all of the limitations of claims 2-9. Applicants submit, therefore, that claims 2-9 are allowable over these patents.

Claims 13-19 depend from claim 12, which has already been shown to have an insufficient rejection lodged against it. Because claims 13-19 depend from a claim that has an insufficient rejection lodged against it and the Examiner does not address claims 13-19 outside of their explicitly recited limitations, Detailed Action ¶ 2, the claims have an insufficient rejection lodged against them. Claims 13-19 also contain additional limitations to those recited in claim 12. These additional limitations provide differentiation over the cited patents.

For example, claim 13 specifies that "determining pressure externally exerted on the pressure-conveyance media by a process media based on the pressure of the pressure conveyance-media and the temperature of the pressure-conveyance media comprises compensating at least one of the pressures for the temperature of the pressure-conveyance media." As explained before, however, the '134 patent teaches or suggests nothing regarding a fluid responsive to external pressure on bolts 12 in pressure sensing unit 5. Furthermore, the '134 patent teaches or suggests nothing regarding a pressure of such a fluid or a temperature of such a fluid, much less compensating at least one of a fluid pressure or an external pressure for the temperature of the fluid. The '985 patent also teaches or suggests nothing regarding a fluid, a pressure of a fluid, or a temperature of a fluid, much less compensating at least one of a fluid pressure or an external pressure for the temperature of the fluid. Applicants note the Examiner's assertions to the contrary, Detailed Action ¶ 2, but even the portion of the '134 patent to which the Examiner refers does not address a fluid, a pressure of a fluid, or a temperature of a fluid, much less compensating at least one pressure for the temperature of the fluid, col. 3, ll. 53-66. For at least these reasons, the '134 patent and the '985 fail to teach or suggest the explicit limitations of claim 13.

For at least these reasons, and for the reasons given with respect to claim 12, Applicants submit that the '134 patent and the '985 patent fail to teach or suggest all of the limitations of claims 13-19. Applicants submit, therefore, that claims 13-19 are allowable over these patents.

Claims 21-25 depend from claim 20, which has already been shown to have an insufficient rejection lodged against it. Because claims 21-25 depend from a claim that has an insufficient rejection lodged against it and the Examiner does not address claims 21-25 outside of their explicitly recited limitations, the claims have an insufficient rejection lodged against them. Claims 21-25 also contain additional limitations to those recited in claim 20, and these additional limitations distinguish over the cited patents, as discussed with respect to claims 13-19. For at least these reasons, Applicants submit that claims 21-25 are allowable over the patents.

#### Added Claims

Applicants have added claims 27-34 to explicitly capture certain inventive aspects. Claim 27, one of the independent claims, is allowable at least because it calls for “a pressure-conveyance media responsive to external pressure on the coupling device,” “a temperature sensor in direct contact with the pressure-conveyance media and operable to sense a temperature of the pressure-conveyance media,” and “a processor operable to determine external pressure on the coupling device based on the pressure of the pressure-conveyance media and the temperature of the pressure-conveyance media.” Claim 32, the other independent claim, is allowable at least because it calls for “determining a pressure of a pressure-conveyance media responsive to external pressure on a coupling device,” “determining a temperature of the pressure-conveyance media by using a temperature sensor in direct contact with the pressure-conveyance media,” and “determining pressure externally exerted on the coupling device based on the pressure of the pressure conveyance-media and the temperature of the pressure-conveyance media.” Claims 28-31, which depend from claim 27, and claims 33-34, which depend from claim 32, include the limitations of their respective independent claims and, hence, are allowable at least for this reason.

#### Unconsidered Information Disclosure Statement

Applicants submitted an Information Disclosure Statement, including a PTO-1449, on October 8, 2004. However, it appears that the Examiner may have overlooked the Information

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Disclosure Statement as Applicants have not received a copy of the PTO-1449 indicating that the Examiner considered the cited documents. Applicants respectfully request the Examiner to return a copy of the PTO-1449 indicating consideration of the cited documents with the next correspondence in the case.

Conclusion

Based on the foregoing, Applicants submit that a good-faith effort has been made to advance the prosecution of this application. Furthermore, Applicants submit that the application is in condition for allowance and respectfully request same. If the Examiner feels that prosecution may be advanced by a conference, however, Applicants respectfully request the Examiner to contact the below-listed attorney.

A check in the amount of \$800.00 is enclosed to cover the cost of the added claim, and a check in the amount of \$120.00 is enclosed to cover the cost of a one-month extension of time. Applicants do not believe that the current paper requires any other adjustment in fees. If, however, Applicants are mistaken, please apply any charges or credits to deposit account 06-1050, with reference to the above attorney-docket number.

Respectfully submitted,

Date: \_\_\_\_\_

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